

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>	
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	9,597	12,990	13,627	14,294	14,502	15,504	16,217	Continuing	TBD
4236     Engineering Analysis	1,226	2,113	2,115	2,126	2,150	2,662	2,960	Continuing	TBD
4807     Agent Defeat Weapons	3,486	5,431	5,360	5,838	5,822	6,062	6,245	Continuing	TBD
5708     Nuclear Weapons Support	4,885	5,446	6,152	6,330	6,530	6,780	7,012	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

(U) **A. Mission Description**

The AF Nuclear Weapons Product Support Center (AFNWPSC) and the AF Nuclear Weapons and Counterproliferation Agency (AFNWCA) are tasked with maintaining and providing the core Air Force nuclear weapons expertise. These organizations provide technical and programmatic guidance for all Air Force nuclear weapon activities including weapons development/sustainment, interoperability, safety/security/surety, stockpile management/retirement, and counterproliferation assessments.

Specific mission tasking includes:

- Analyze and document nuclear weapons issues related to risk assessment, data collection, model development, and weapon effectiveness in support of the Joint DoD-DOE Surety Plan, DOE Stockpile Stewardship plan, DoD/DOE Long Range Planning Assessment, and the DoD/DOE Annual Weapon Certification.
- Support the DoD and Joint DoD/DOE weapons acquisition activities for the sustainment and/or development of nuclear weapons, delivery systems, weapon storage facilities, and logistical/maintenance equipment to include nuclear certification as required.
- Identify, evaluate, and assess current and projected counterproliferation systems operating in joint environments. Participate in the acquisition process as appropriate for those projects identified for development (e.g., Robust Nuclear Earth Penetrator (RNEP) and Surface Target Ordnance Package (STOP)).

Specific weapons and weapon systems for which these agencies provide nuclear expertise and have responsibilities include:

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(U) **A. Mission Description Continued**

- The W62/Mk12, W78/Mk12A, W87/Mk21, and W80 nuclear warheads and the associated delivery systems (e.g., the Minuteman III and Peacekeeper Intercontinental Ballistic Missiles (ICBMs), the Air-Launched Cruise Missile (ALCM), and the Advanced Cruise Missile (ACM)).
- The B61 and B83 strategic bombs and the associated delivery systems (e.g., B-52/B-2 strategic bombers, F-15E/F-16 dual capable aircraft, and NATO nuclear capable aircraft).
- Logistical movement aircraft (e.g., C-130, C-141, and C-17 transport aircraft).
- The associated logistics/maintenance handling, support, and test equipment.

Customers include:

- Department of Defense (DoD) agencies (e.g., Office of Secretary of Defense (OSD), Defense Threat Reduction Agency (DTRA), Joint Staff, and Commander in Chiefs (CINCs) of nuclear-committed unified/specified commands
- Air Force and Navy organizations/agencies
- Department of Energy (DOE) organizations/agencies
- NATO.

Efforts in this program are essential to maintaining current safety and reliability levels for weapons in the Air Force nuclear stockpile as well as addressing current and future Air Force nuclear deterrence and counterproliferation needs.

(U) **B. Budget Activity Justification**

These efforts are Budget Activity 05, Engineering and Manufacturing Development, because they result in identifying and developing potential solutions to problems and/or deficiencies in Air Force nuclear weapons and their supporting infrastructure

(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	10,039	13,120	13,493	TBD
(U) Appropriated Value	10,133	13,120		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions		-130		
b. Small Business Innovative Research	-331			
c. Omnibus or Other Above Threshold Reprogram				

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(U) C. Program Change Summary (\$ in Thousands) Continued

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
d. Below Threshold Reprogram	-112			
e. Rescissions	-93			
(U) Adjustments to Budget Years Since FY 2002 PBR			134	
(U) Current Budget Submit/FY 2003 PBR	9,597	12,990	13,627	TBD
(U) <u>Significant Program Changes:</u>				
No significant technical or schedule changes.				

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>				PROJECT <b>4236</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4236      Engineering Analysis	1,226	2,113	2,115	2,126	2,150	2,662	2,960	Continuing	
<p>(U)    <b><u>A. Mission Description</u></b>  Perform engineering analysis for all USAF nuclear weapons, delivery systems and counterproliferation/counterforce efforts. Provide the engineering and technical management expertise required for the Nuclear Certification Process for all USAF nuclear weapons, delivery systems, and logistical/maintenance support equipment. Provide technical expertise unavailable through organic resources in critical areas of nuclear weapons safety and security, nuclear operations, and counterproliferation.</p> <p>(U)    <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U)    \$100      Nuclear Aircraft System Support. Provided Aircraft Monitor and Control (AMAC) software analysis and technical expertise for continued nuclear weapons integration on US and Non-US NATO aircraft systems; completed revisions on three Aircraft Loading Manuals; completed twelve changes to loading/aircrew delivery manuals; and supported development work for pneumatic bomb racks for F-15 aircraft</p> <p>(U)    \$830      Nuclear Weapons Program Support. Provided technical expertise to support development, fielding and updates of the W80, W62, W87, W78, W84, B61, and B83 weapons systems. Stockpile stewardship of these weapon systems consisted of weapons' Project Officer Group (POG) actions in safety analyses, program actions, and agreements. Documented and supported 11 POG meetings, 14 Executive POG meetings and 44 other subgroup and technical nuclear meetings. The Nuclear Weapons Management System and Knowledge Base System was updated; special studies on stockpile related matters continue; development flight test support for ALT 354 (fin kits) weapon modification program completed; technical analysis supporting life extension programs for all weapons systems except the W84 and W62 is on-going.</p> <p>(U)    \$296      Counterproliferation Support. Provided continued technical support for counterproliferation assessments and technical expertise in the areas of nuclear, advanced technology and conventional systems identified as possible counterforce technologies. Provided technical and programmatic support on counterproliferation matters to AFNWCA and HQ USAF. Provided analyses to evaluate possible future nuclear weapon penetrator designs for survivability and effectiveness. Supported STRATCOM Scientific Advisory Group (SAG) Science &amp; Technology (S&amp;T) meetings, Nuclear Planning Group Study and Enduring Freedom/Infinite Justice planning.</p> <p>(U)    \$1,226      Total</p>									
<div style="display: flex; justify-content: space-between;"> <span>Project 4236</span> <span>Page 4 of 22 Pages</span> <span>Exhibit R-2A (PE 0604222F)</span> </div>									

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BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>	PROJECT <b>4236</b>
<p>(U) <u><b>A. Mission Description Continued</b></u></p> <p>(U) <u><b>FY 2002 (\$ in Thousands)</b></u></p> <p>(U) \$105 Nuclear Aircraft System Support. Revise and verify nuclear weapons loading , delivery, warhead mate and demate, and explosive ordnance disposal (EOD) technical orders; provide EOD technical support to DoD/DOE agencies; provide support on the nuclear hardness database; perform aircraft software analysis; support the nuclear aircraft surveillance test program, provide technical expertise for continued nuclear weapons integration of US and non-US aircraft systems; and provide logistic analysis as required.</p> <p>(U) \$1,696 Nuclear Weapons Program Support. Provide technical expertise to support development, fielding and updates of nuclear weapon military characteristics (MCs) and stockpile-to-target sequence (STS) documents; document and support all weapons safety analyses, program actions, and agreements; update the Nuclear Weapon Management System and Knowledge Base System; conduct special studies on stockpile related matters; conduct development flight testing for weapon modification programs to include B61 ALT 356; provide technical analysis to support life extension options for B83, B61, W80 and ICBM warheads, inactive stockpile issues, use control, long term storage, and dismantlement issues to weapon Lead Project Officers and Headquarters, USAF.</p> <p>(U) \$312 Counterproliferation Support. Provide technical support and engineering for joint DoD/DOE Acquisition Phase 6.2 for the Robust Nuclear Earth Penetrator (RNEP) effort; perform analyses of AF/DOE proposed alterations/modifications to the enduring stockpile; lead the development of new analytical methodologies that support these assessments; provide support for counterproliferation operational and assessment efforts other than Agent Defeat Weapon (ADW) effort.</p> <p>(U) \$2,113 Total</p> <p>(U) <u><b>FY 2003 (\$ in Thousands)</b></u></p> <p>(U) \$120 Nuclear Weapons Systems Support</p> <p>--- Perform independent nuclear surety analyses; develop nuclear certification requirements plans; perform compatibility and safety certification analysis; develop and manage master certification web-based database/list</p> <p>--- Manage testing in support of nuclear certification; manage and maintain nuclear hardness database; conduct special safety studies, nuclear weapon storage and maintenance facilities assessments, and weapons safety assessments for alterations, modifications, and limited life component replacements</p> <p>--- Provide technical support to and administer the various weapon system Project Officer's Groups; support technical order management; perform weapon system software and hardware analysis; provide logistics analysis; revise and verify nuclear weapons loading, delivery, warhead mate and demate, and explosive ordnance disposal (EOD) technical orders; provide technical support to DoD/DOE agencies on EOD issues.</p>		
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<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)</b>		DATE <b>February 2002</b>
<b>BUDGET ACTIVITY</b> <b>05 - Engineering and Manufacturing Development</b>	<b>PE NUMBER AND TITLE</b> <b>0604222F Nuclear Weapons Support</b>	
		<b>PROJECT</b> <b>4236</b>

  

(U) **A. Mission Description Continued**

(U) **FY 2003 (\$ in Thousands) Continued**

--- Provide technical expertise for continued nuclear weapons integration of US and Non-US aircraft systems.

(U) \$1,695 Nuclear Weapons Program Support

--- Provide technical expertise to support development, fielding and updates of nuclear weapon military characteristics (MCs) and stockpile-to-target sequence (STS) documents; document and support all weapons safety analyses, program actions, and agreements; update the Nuclear Weapon Management System and Knowledge Base System; conduct special studies on stockpile related matters

--- Conduct development flight testing for weapon modification programs

--- Provide technical analysis to support life extension options for B83, B61, W80 and ICBM warheads, inactive stockpile issues, use control, long term storage, and dismantlement issues to weapon Lead Project Officers and Headquarters, USAF.

(U) \$300 Counterproliferation Support

--- Provide technical support and engineering for joint DoD/DOE Acquisition Phase 6.2 of the Robust Nuclear Earth Penetrator (RNEP) effort; perform analysis of AF/DOE proposed alterations/modifications to the enduring stockpile

--- Lead the development of new analytical methodologies that support these assessments

--- Provide support for counterproliferation operational and assessment efforts other than ADW effort.

(U) \$2,115 Total

(U) **B. Project Change Summary**

No significant changes.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Not Applicable									

(U) **D. Acquisition Strategy**

Multiple small, firm fixed price contracts for contractors and MIPRs to government labs for technical analyses and technical support in safety, operations and counterproliferation assessments.

(U) **E. Schedule Profile**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
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## RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

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(U) E. Schedule Profile Continued

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Nuc Wpm Mgmt Sys/data management	*	*	*	*	*	X	X	X	X	X	X	X
(U) B61 ALT 356 Flight Testing						X	X					
* - Completed Event    X - Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
<b>05 - Engineering and Manufacturing Development</b>					<b>0604222F Nuclear Weapons Support</b>				<b>4236</b>	
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Contractor Engineering Support					976		1,813		1,765
(U)	Development Flight Test Support					250		300		350
(U)	Total					1,226		2,113		2,115
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
	<u>Contractor or</u>	<u>Contract</u>								
	<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>					
	<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
	<u>Product Development Organizations</u>									
	Multiple (Orion International, FFP		2QFY01	N/A	N/A	1,026	676	1,493	1,435	Continuing
	ITT Systems, & Albuquerque									
	Logistics)									
	<u>Support and Management Organizations</u>									
	ANSER	FFP	Annual	N/A	N/A		300	320	330	Continuing
	<u>Test and Evaluation Organizations</u>									
	Various AFMC Test Centers	MIPR	2QFY01	N/A	N/A	710	250	300	350	Continuing
<b>(U) Government Furnished Property:</b>										
		<u>Contract</u>								
		<u>Method/Type</u>	<u>Award or</u>							
	<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
	<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
	<u>Product Development Property</u>									
	None									
	<u>Support and Management Property</u>									
	None									
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BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT		
05 - Engineering and Manufacturing Development			0604222F Nuclear Weapons Support			4236		
(U) <u>Government Furnished Property Continued:</u>								
<u>Test and Evaluation Property</u>								
None								
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
			<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>								
Subtotal Product Development			1,026	676	1,493	1,435	TBD	TBD
Subtotal Support and Management				300	320	330	TBD	TBD
Subtotal Test and Evaluation			710	250	300	350	TBD	TBD
Total Project			1,736	1,226	2,113	2,115	TBD	TBD
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BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>				PROJECT <b>4807</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4807      Agent Defeat Weapons	3,486	5,431	5,360	5,838	5,822	6,062	6,245	Continuing	
<p>(U)    <b><u>A. Mission Description</u></b>  Perform engineering analyses for the Agent Defeat Weapon (ADW) to prepare for entry into acquisition. Plan for and transition ADW concepts into either an acquisition or advanced concept technology demonstration (ACTD) program to include identifying funding, technical, schedule, and programmatic content. Prepare the necessary acquisition-related documentation to support program and/or decision reviews. Develop and evaluate software tools required for the employment these weapons.</p> <p>(U)    <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U)    \$2,028      Agent Defeat Weapon (ADW). Improved the fidelity of the Simulated Environment and Response Execution Nesting Tool (SERPENT) for incorporation in the USAF/DoD Joint Targeting Toolbox as the Agent Defeat Weapon target-planning tool; completed Engineering/Engagement analysis, including excursion and intelligence uncertainty assessments; completed concept of operations (CONOPS), campaign analysis, and high fidelity life cycle cost estimates; and supported Counterforce Workshop to address ADW policy issues.</p> <p>(U)    \$1,458      System Program Office Efforts. Stood up the initial cadre for the ADW System Program Office (SPO) and began activities for Milestone A decision and new program start. Includes mandatory documentation preparation and assessments to include: the Request for Proposal (RFP) - SPO; ORD - HQ ACC/SPO; Test Evaluation Master Plan (TEMP) - SPO; System Engineering Master Plan (SEMP)- SPO; System Threat Assessment (STA) - 497IG; C4ISP - 497IG; SPO High Fidelity Life Cycle Cost (LCC) Estimates; and Program Milestone I acquisition decision review requirements. Accomplished documentation preparation and assistance in preparation for Milestone I Decision (CPIPT/AFROC)</p> <p>(U)    \$3,486      Total</p> <p>(U)    <b><u>FY 2002 (\$ in Thousands)</u></b></p> <p>(U)    \$2,970      Continue Agent Defeat Weapon (ADW) Soft/Fixed Target Acquisition activity. Develop collateral effects prediction tool in support of Surface Target Ordnance Package (STOP) Advanced Concept Technology Demonstration (ACTD). STOP is the only alternative for fixed/soft targets in the ADW analysis of alternatives (AoA) which significantly increases lethality and decreases collateral effects compared to legacy weapons</p> <p>(U)    \$2,461      Continue Agent Defeat Weapon (ADW) Hard Target Acquisition activity. Complete ADW Phase 0 AoA activities to include providing recommendation to AFROC and finish AoA Final Report. Develop ADW Hard Target Acquisition Strategy to include starting DOE phase I</p>									
<div style="display: flex; justify-content: space-between;"> <span>Project 4807</span> <span>Page 10 of 22 Pages</span> <span>Exhibit R-2A (PE 0604222F)</span> </div>									

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		<b>PROJECT</b> <b>4807</b>

  

(U) **A. Mission Description Continued**

(U) **FY 2002 (\$ in Thousands) Continued**

Development and/or DoD Pre-Milestone B Risk Reduction for ADW Hard Target alternative(s). Efforts primarily address payload, payload ejection, and fuzing. Perform Empirical Lethality Model (ELM)-related testing to continue increase its fidelity in areas as related to legacy weapons and ADW AoA recommended alternatives. Release Beta version of Simulated Environment and Response Execution Nesting Tool (SERPENT). Continue to improve fidelity of SERPENT and perform preliminary VV&A for incorporation in the USAF/DoD Joint Targeting Toolbox as the ADW target-planning tool. Continue to Provide Support to Infinite Justice.

(U) \$5,431 Total

(U) **FY 2003 (\$ in Thousands)**

(U) \$2,900 Continue development of acquisition strategy of Agent Defeat Weapon (ADW) Soft/Fixed Target capability with design/development of the Surface Target Ordnance Package (STOP) H/W Advanced Concept Technology Demonstration (ACTD).

(U) \$2,460 Continue development of ADW Hard Target Acquisition Strategy to include:  
     --- DoD/DOE acquisition efforts to include joint DoD/DOE Phase 2/2A and/or DoD Pre-Milestone B Risk Reduction for ADW Hard Target alternative(s).  
     --- Continue to improve fidelity of Simulated Environment and Response Execution Nesting Tool (SERPENT) and perform VV&A for incorporation in the USAF/DoD Joint Targeting Toolbox as the ADW target-planning tool.

(U) \$5,360 Total

(U) **B. Project Change Summary**

Due to continued analytical assessments to address uncertainty issues in the AoA and decision by the ADW Executive Working Group to recommend designation of the STOP program as an ACTD, Milestone I decision will be delayed until late FY 03.

(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) N/A									

(U) **D. Acquisition Strategy**

ADW Phase 0/I activities are using firm/fixed price contracts and MIPRs to government labs for advanced analyses and development of selected Agent Defeat concepts.

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(U) E. Schedule Profile

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) End ADW Phase 0 AoA						X						
(U) Begin/Complete ADW acquisition documentation	*								X			
(U) Begin STOP ACTD Activities								X				
(U) ADW Milestone I												X
(U) -- Begin ADW Phase I												X
* - Completed Event X - Planned Event												

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
05 - Engineering and Manufacturing Development					0604222F Nuclear Weapons Support					4807	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
(U)	Hardware Development				1,350		3,238		2,900		
(U)	Software Development				1,235		1,040		1,300		
(U)	Program Management Support				800		1,040		990		
(U)	Miscellaneous				101		113		170		
(U)	Total				3,486		5,431		5,360		
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or</u>		<u>Contract</u>									
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>			
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>	
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2001</u>	
<u>Product Development Organizations</u>											
Air Armament Center		MIPR		2QFY02		4,970		4,970		2,070	
(AAC/WMX)										2,900	
Multiple (ITT Systems, Orion		FFP/MIPR		2QFY02		N/A		N/A		2,450	
International, & various DOE										3,186	
National Laboratories)										2,469	
<u>Support and Management Organizations</u>										1,473	
Orion International		FFP		2QFY02		N/A		N/A		300	
<u>Test and Evaluation Organizations</u>										892	
TBD		TBD		TBD		TBD		TBD		987	
										Continuing	
										TBD	
(U) <u>Government Furnished Property:</u>											
		<u>Contract</u>									
		<u>Method/Type</u>		<u>Award or</u>							
<u>Item</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Delivery</u>				<u>Total Prior</u>	
<u>Description</u>		<u>Vehicle</u>		<u>Date</u>		<u>Date</u>				<u>to FY 2001</u>	
										<u>Budget</u>	
										<u>FY 2001</u>	
										<u>FY 2002</u>	
										<u>FY 2003</u>	
										<u>Budget to</u>	
										<u>Complete</u>	
										<u>Total</u>	
										<u>Program</u>	
Project 4807					Page 13 of 22 Pages				Exhibit R-3 (PE 0604222F)		

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604222F Nuclear Weapons Support				4807	
(U) <u>Government Furnished Property Continued:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>									
None									
<u>Support and Management Property</u>									
None									
<u>Test and Evaluation Property</u>									
None									
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development				2,450	3,186	4,539	4,373	TBD	TBD
Subtotal Support and Management				300	300	892	987	TBD	TBD
Subtotal Test and Evaluation								TBD	TBD
Total Project				2,750	3,486	5,431	5,360	TBD	TBD

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## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 05 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604222F Nuclear Weapons Support				PROJECT 5708	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5708 Nuclear Weapons Support	4,885	5,446	6,152	6,330	6,530	6,780	7,012	Continuing	0
<p>(U) <b><u>A. Mission Description</u></b>  Fund Air Force Nuclear Weapons Product Support Center (NWPSC) and the Air Force Nuclear Weapons &amp; Counterproliferation Agency (AFNWCA) civilians at Kirtland AFB, New Mexico providing technical and engineering support for all USAF nuclear weapon systems and counterproliferation technical efforts. Conduct studies and analysis for nuclear capable aircraft and missile systems to include ground and maintenance support equipment required to meet certification, safety, security, operational, and other requirements. Administer oversight activities such as the Project Officers Group function for all Air Force nuclear weapon systems. Interface with the Department of Energy and their national laboratories to accomplish weapon sustainment/life extension programs.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <p>(U) \$1,303 Nuclear Aircraft System Support. Conducted Nuclear Aircraft Weapon System Surveillance testing: F-16 Block 30/40/50 Mid Life Upgrade Module 2A; F-15E, and PA-200; managed the B-52H, F-15E, B-2A, F-16C/D, and PA-200 Project Officer Groups (POGs); prepared and Issued Aircraft Nuclear Compatibility Certification Statements for F-15, F-16, B-2A, B-52 and PA-200; supported Strike Aircraft Operational Safety Review (OSR); provided key member and technical advisor to AF Vice Chief of Staff-directed Nuclear Certification IPT; supported Mid-Life upgrade for F-16 aircraft; provided technical support to three different aircraft Product Improvement Working Groups; participated in four all-command reviews of weapons loading manuals; supported flight testing for weapons modifications and development activities; provided test support for Storage Blast &amp; Effects Testing &amp; Analysis (SBETA) , Weapon Maintenance Truck (WMT) Modification Evaluation, replacement MB-4 Tow Vehicle Testing, and WS3 Sustainment Engineering Modification (Nuclear Certification).</p> <p>(U) \$995 Nuclear Ground-Launched Missile (ICBM) Support. Conducted independent safety analysis to support additional Nuclear Weapons System Safety Group (NWSSG) activities for Two Person Control requirements for the Airborne Launch Control System (ALCS) at dispersed locations; coordinated/implemented new AF Unsatisfactory Report (UR) system to be compatible with the WEURS database maintained by Sandia National Laboratories, requiring our coordination with Air Force Units, DTRA, and SNL; supported W62 and W78 ICBM Warhead Maintenance Evaluations; cataloging Management Codes identified by HQ AFMC/LGI; and completed Pool Fire Analysis for Limited Life Component Exchange Warhead Maintenance Assessment.</p> <p>(U) \$895 Nuclear Weapons/Systems Assessments. Initiated Air Force Nuclear Weapon Depot Operational Risk Management Assessment; completed Kirtland Underground Munitions Maintenance Storage Complex (KUMMSC) Blast/Security Door Hinge Reliability Analysis and the KUMMSC Recapture Analysis; chaired and supported B61 Safety Subgroup.</p>									
Project 5708		Page 15 of 22 Pages				Exhibit R-2A (PE 0604222F)			

## UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>05 - Engineering and Manufacturing Development</b>	<b>0604222F Nuclear Weapons Support</b>	<b>5708</b>
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 2001 (\$ in Thousands) Continued</u>		
(U) \$1,140	Nuclear Weapons Program Support. As the AF Nuclear Weapons Center of Expertise, the AF POGs accomplished nuclear weapon safety, reliability, mission analysis, compatibility studies, and actions supporting management of the AF nuclear weapon stockpile. Weapon use control analyses, environmental studies, intrinsic radiation studies, and life extension programs for the B83, W78, B61, W80, and W87 were accomplished. Alt 355 (Gas Transfer System) for the B83 completed Phase 6.3; Alt 354 (fin kit) for the B61 is in full production (Phase 6.6); B61 Alt 356 (Spin Rocket) and Alt 357 (Canned Subassembly) are in progress; and Alt 351 for the W78 is proceeding. Flight testing for Alt 356 was successfully completed. The final Design Review and Acceptance Group (DRAAG) decision accepting modifications to the W87 warhead were approved. The W80 Life Extension Program (LEP) is continuing in Phase 6.3. Annual certification of the AF nuclear stockpile has been successfully accomplished.	
(U) \$552	Counterproliferation Assessments. Provided program guidance, analysis and expertise in the evaluation of nuclear, conventional and advanced weapon technologies and CP-related technologies. Supported Surface Target Ordnance Package (STOP) Advanced Technology Demonstration (ATD) effort and ACTD planning, JFCOM WMD counterforce exercise, Military Operations Research Society's (MORS) Chemical and Biological (CBW) Workshop and Weapons of Mass Destruction (WMD) Full Spectrum Defeat workshops. Led the Nuclear Weapons Council directed Nuclear Program Review regarding Hard and Deeply Buried Target Defeat capabilities.	
(U) \$4,885	Total	
(U) <u>FY 2002 (\$ in Thousands)</u>		
(U) \$1,381	Nuclear Aircraft System Support. Continue FY 2001 efforts to include: <ul style="list-style-type: none"> <li>-- Support of the US Strategic Command's nuclear safe escape effort;</li> <li>-- Update/expand nuclear hardness database; conduct nuclear aircraft weapon system surveillance test programs;</li> <li>-- Provide technical support for the B-52H and Long-term Storage Operational Safety Reviews (OSRs) and the NWSSG Special Safety Study for the C-130J aircraft;</li> <li>-- Complete independent technical nuclear safety analysis for certification of the C-130J aircraft;</li> <li>-- Continue support for certification of ejector rack cartridges, aircraft nuclear weapon test sets and support equipment, and development of the common COLT/COAST test set;</li> <li>-- Provide nuclear surety and compatibility requirements documents for all USAF nuclear capable aircraft weapon systems;</li> <li>-- Manage the B-52H, F-15E, B-2A, F-16, and PA-200 POGs;</li> <li>-- Perform independent nuclear safety design evaluation and certification of nuclear weapon system modifications;</li> </ul>	
Project 5708	Page 16 of 22 Pages	Exhibit R-2A (PE 0604222F)



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>05 - Engineering and Manufacturing Development</b>	<b>0604222F Nuclear Weapons Support</b>	<b>5708</b>
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2002 (\$ in Thousands) Continued</u></p> <p>-- Chair Technical Order review, validation/verification, and technical content conferences;  -- Publish/distribute general nuclear weapons technical guidance through the JNWPS;  -- Furnish specific guidance to MAJCOMs on Explosive Ordnance Disposal and issues affected by systems hardware/software changes;  -- Provide administrative/technical oversight and review of the UR system.</p> <p>(U) \$1,109 Nuclear Ground-Launched Missile (ICBM) Support. Continue FY 2001 level of effort: provide nuclear surety design criteria, standards, specifications, and related requirements documents for all USAF ground-launched missile systems; provide nuclear surety design guidance to ICBM program office/contractors for weapon system modifications and upgrade programs, perform independent nuclear surety analyses for nuclear safety design certification of weapon system modifications; provide nuclear certification support to HQ AFSC/SEW and the ICBM SPO; provide technical support required by NWSSG action items; support Peacekeeper Weapon System nuclear surety activities (either life extension programs or deactivation activities); and provide member to the ICBM Nuclear Surety Working Group, unauthorized launch studies, and special security working groups.</p> <p>(U) \$921 Nuclear Weapons/Systems Assessments. Continue FY 2001 efforts to include:  -- Continue application of joint DoD/DOE nuclear surety assessment methodology to abnormal nuclear environment analyses;  -- Chair/manage the Safety Subgroup of the B61 Project Officers Group;  -- Conduct safety assessment of warhead maintenance operation in AF facilities;  -- Provide technical advisors and the AFMC voting member Nuclear Weapons Depot Maintenance and Storage Operations NWSSG Special Safety Studies;  -- Conduct fault tree analyses of nuclear weapons and weapon systems;  -- Evaluate safety implications of modifications of Air Force maintenance and storage facilities; and  -- Provide other assessments as required.</p> <p>(U) \$1,326 Nuclear Weapons Program Support. Continue FY 2001 efforts to include:  -- Accomplish nuclear weapon safety, reliability, mission analysis and compatibility studies;  -- Support USAF nuclear weapon stockpile activities, weapon use control analyses, and environmental and intrinsic radiation studies;  -- Continue to develop, plan, analyze, schedule and execute nuclear weapon life extension programs for B61, B83, W80 and ICBM warheads; and  -- Continue support to USAF, DoD and other agencies in all facets of the nuclear arsenal.</p> <p>(U) \$709 Counterproliferation Assessments. Continue FY 2001 efforts to include:</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>	PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>	PROJECT <b>5708</b>
<p>(U) <u><b>A. Mission Description Continued</b></u></p> <p>(U) <u><b>FY 2002 (\$ in Thousands) Continued</b></u></p> <p>- Provide technical guidance, analysis and support for the ADW Phase 0 effort and counterproliferation (CP) related efforts;  -- Provide program guidance, analysis and expertise in the evaluation of nuclear, conventional and advanced weapon technologies and CP related technologies;  -- Lead the joint DoD/DOE Acquisition Phase 6.2/6.2A for the Robust Nuclear Earth Penetrator (RNEP) effort.</p> <p>(U) \$5,446 Total</p> <p>(U) <u><b>FY 2003 (\$ in Thousands)</b></u></p> <p>(U) \$1,862 Nuclear Aircraft System Support. Continue FY 2002 efforts to include:  --- Support the US Strategic Command's nuclear safe escape effort; update/expand nuclear hardness databases; conduct nuclear aircraft weapon system surveillance test programs; and support Special Safety Studies  --- Complete independent technical nuclear safety analysis for certification of the C-130J aircraft and WS3 System Sustainment Modifications  --- Continue support for aircraft nuclear weapon test sets and support equipment; provide nuclear surety and compatibility requirements documents for all USAF nuclear capable aircraft weapon systems  --- Manage the B-52H, F-15E, B-2A, F-16, and PA-200 Project Officers Groups (POGs); perform independent engineering evaluations for nuclear safety design certification of nuclear weapon system modifications and nuclear weapon compatibility certification  --- Administer technical order review and validation/verification process; update/publish general nuclear weapons technical guidance through the JNWPS  --- Furnish specific guidance to major commands (MAJCOMs) on explosive ordnance disposal and issues affected by systems hardware/software changes  --- Provide administrative/technical oversight and review of the unsatisfactory report (UR) system; perform nuclear certification oversight functions; and develop/maintain web-based master certification database/list.</p> <p>(U) \$1,576 Nuclear Ground-Launched Missile/Intercontinental Ballistic Missile (ICBM) Support. Continue FY 2002 efforts to include:  --- Provide nuclear surety design criteria, standards, specifications, and related requirements documents for all USAF ground-launched missile systems; provide nuclear surety design guidance to ICBM program office/contractors for weapon system modifications and upgrade programs; perform independent nuclear surety analyses for nuclear safety design certification of weapon system modifications;  --- Provide technical support for the ALCS OSR and NWSSG Special Safety Studies; complete independent technical nuclear safety analysis for certification of the C-130J aircraft and WS3 System Sustainment Modifications and provide nuclear certification support to HQ AFSC/SEW</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
<b>05 - Engineering and Manufacturing Development</b>	<b>0604222F Nuclear Weapons Support</b>	<b>5708</b>
<p>(U) <u><b>A. Mission Description Continued</b></u></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u></p> <p>and the ICBM SPO</p> <p>--- Provide technical support required by NWSSG action items; support Peacekeeper Weapon System nuclear surety activities (either life extension programs or deactivation activities); participate in the ICBM Nuclear Surety Working Group, unauthorized launch studies, and special security working groups</p> <p>--- Perform nuclear certification oversight functions; and develop/maintain web-based master certification database/list.</p> <p>(U) \$519 Nuclear Weapons/Systems Assessments. Continue FY 2002 efforts to include:</p> <p>--- Continue application of joint DoD/DOE nuclear surety assessment methodology to abnormal nuclear environment analyses</p> <p>--- Chair/manage the Safety Subgroup of the B61 Project Officers Group; conduct safety assessment of warhead maintenance operation in AF facilities</p> <p>--- Participate in and provide technical support to the AFMC voting member Nuclear Weapons Depot Maintenance and Storage Operations NWSSG Special Safety Studies</p> <p>--- Conduct fault tree analyses of nuclear weapons and weapon systems; evaluate safety implications of modifications of Air Force storage and maintenance facilities; and provide other assessments as required.</p> <p>(U) \$1,547 Nuclear Weapons Program Support. Continue FY 2002 efforts to include:</p> <p>--- Accomplish nuclear weapon safety, reliability, mission analysis and compatibility studies; support USAF nuclear weapon stockpile activities, weapon use control analyses, and environmental and intrinsic radiation studies</p> <p>--- Continue to develop, plan, analyze, schedule and execute nuclear weapon life extension programs for B61, B83, W80 and ICBM warheads; and continue support to USAF, DoD and other agencies in all facets of the nuclear arsenal.</p> <p>(U) \$648 Counterproliferation Assessments. Continue FY 2002 efforts to include:</p> <p>--- Provide technical guidance, analysis and support for the agent defeat weapon (ADW) acquisition efforts</p> <p>--- Provide counterproliferation-related analyses, expertise and program guidance in the evaluation of nuclear, conventional and advanced weapon technologies to include joint DoD/DOE Acquisition Phase 6.2/6.2A efforts for the Robust Nuclear Earth Penetrator (RNEP).</p> <p>(U) \$6,152 Total</p> <p>(U) <u><b>B. Project Change Summary</b></u></p> <p>No significant changes.</p>		
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)							DATE <b>February 2002</b>	
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604222F Nuclear Weapons Support</b>			PROJECT <b>5708</b>	
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>								
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
<b>(U) Not Applicable</b>								
<b>(U) D. Acquisition Strategy</b> RDT&E funds primarily provide for Air Force technical civilian personnel providing nuclear weapon and weapon system management and development and CP related nuclear, conventional, advanced weapon technology, ISR and BDA guidance, direction, analysis and development. These scientists and engineers interface with Headquarters USAF, Air Force nuclear weapon System Program Offices, operational commands and the Department of Energy, performing engineering development and analysis to ensure continued and improved weapon system safety, security, reliability and compatibility and managing/developing counterproliferation counterforce capabilities.								
<b>(U) E. Schedule Profile</b>								
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>	
	1	2	3	4	1	2	3	4
(U) B61 ALT 357 Phase 6.2 Study Start	*							
(U) B61 ALT 357 Phase 6.2 Study Complete						X		
(U) W80 Life Extension Phase 6.3 Start	*							
(U) W80 Life Extension Phase 6.3 Complete							X	
(U) B83 ALT 355 Phase 6.6 Approval					*			
(U) B61 ALT 354 Phase 6.6 Approval			*					
(U) B61 ALT 356 Phase 6.2/6.3 Study Start					*			
(U) RNEP Phase 6.2 Study Start						X		
(U) Annual Certification		*					X	
* - Completed Event    X - Planned Event								

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Exhibit R-2A (PE 0604222F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
05 - Engineering and Manufacturing Development					0604222F Nuclear Weapons Support					5708	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
(U)	Program Management Personnel				250		255		286		
(U)	Research Personnel				3,220		3,350		3,846		
(U)	Travel				300		369		420		
(U)	Training Development				110		127		120		
(U)	Research Support Equipment Acquisition				200		194		200		
(U)	Contract Services Support				250		262		340		
(U)	Miscellaneous				555		889		940		
(U)	Total				4,885		5,446		6,152		
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or</u>		<u>Contract</u>									
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>			
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>	
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2001</u>	
<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget to</u>	
<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Complete</u>		<u>Program</u>			
<u>Product Development Organizations</u>											
Air Armament Center/Nuclear		N/A		N/A		N/A		7,792		2,985	
Weapons Product Support								3,215		3,491	
Center (NWPSC) (AAC/WN)										Continuing	
Air Force Nuclear Weapons		N/A		N/A		N/A		4,520		1,650	
and Counterproliferation								1,969		2,321	
Agency (AFNWCA)										Continuing	
<u>Support and Management Organizations</u>											
GTE Government Service		FFP		1QFY01		N/A		N/A		245	
Corp								250		262	
<u>Test and Evaluation Organizations</u>										340	
None										Continuing	
										TBD	
Project 5708											
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
05 - Engineering and Manufacturing Development				0604222F Nuclear Weapons Support				5708		
(U) <u>Government Furnished Property:</u>										
	<u>Contract</u>									
	<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Property</u>										
None										
<u>Support and Management Property</u>										
None										
<u>Test and Evaluation Property</u>										
None										
				<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Subtotals</u>				<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
Subtotal Product Development				12,312	4,635	5,184	5,812	TBD	TBD	
Subtotal Support and Management				245	250	262	340	TBD	TBD	
Subtotal Test and Evaluation										
Total Project				12,557	4,885	5,446	6,152	TBD	TBD	

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